

ACCESSION #: 9909090134

NON-PUBLIC?: N

LICENSEE EVENT REPORT (LER)

FACILITY NAME: WOLF CREEK GENERATING STATION PAGE: 1 OF 3

DOCKET NUMBER: 05000482

TITLE: Engineered Safety Feature Actuation Because of Closure of

'D' Steam Generator Feedwater Regulating Valve

EVENT DATE: 08/05/1999 LER #: 1999-008-00 REPORT DATE: 09/03/1999

OTHER FACILITIES INVOLVED: DOCKET NO: 05000

OPERATING MODE: Mode 1 POWER LEVEL: 100

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR SECTION:

50.73(a)(2)(iv)

LICENSEE CONTACT FOR THIS LER:

NAME: Michael J. Angus TELEPHONE: (316) 364-4077

Manager Licensing and Corrective Action

COMPONENT FAILURE DESCRIPTION:

CAUSE: X SYSTEM: SJ COMPONENT: IMOD MANUFACTURER: W120

REPORTABLE EPIX: Y

SUPPLEMENTAL REPORT EXPECTED: No

ABSTRACT:

At 1258 hours, Wolf Creek experienced an automatic reactor trip following closure of valve AEFCV-540, 'D' Steam Generator Feedwater Regulating Valve. When the valve closed steam generator level decreased below the reactor trip setpoint of 23.5 percent, initiating a reactor trip. The unit received a feedwater isolation and auxiliary feedwater actuation (both motor and turbine driven) because of the low-low steam generator levels.

All control rods fully inserted, and all safety equipment performed as designed. The Reactor Protection System (RPS) and the Engineered Safety Features (ESF) performed as required.

The cause of the Main Feedwater Regulating Valve closure was the failure of a Westinghouse 7300 Process Control NCB Group 1 controller card that provides control for the Main Feedwater Regulating Valve for Steam Generator 'D'. The Westinghouse 7300 Process Control NCB Group 1 controller card was replaced.

The safety significance of this event has been evaluated and determined to be low. This event is bounded by the current licensing basis analysis as reported in USAR Section 15.2.7. All safety equipment performed as designed and there were no adverse effects on the health and safety of the public.

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Plant Conditions Prior to the Event:

Mode -- 1

Power -- 100 percent

Temperature -- 586.5 degrees Fahrenheit

Pressure -- 2233 pounds per square inch gauge

Basis for Reportability:

On Thursday, August 5, 1999, at approximately 1258 hours, Wolf Creek Generating Station (WCGS) experienced an automatic reactor [RCT] trip because of a failure of AEFCV-540 [SJ-FCV], 'D' Steam Generator Feedwater Regulating Valve. The valve failed closed and steam generator [SG] level decreased below reactor trip setpoint of 23.5 percent.

The unit received a feedwater isolation signal and an auxiliary feedwater actuation (both motor and turbine driven) because of the low-low steam generator levels. The feedwater isolation signal and the auxiliary

feedwater actuation are Engineered Safety Features (ESF). Therefore, this event is reportable pursuant to 10 CFR 50.73(a)(2)(iv).

Event Description:

On Thursday, August 5, 1999, at approximately 1257 hours, WCGS Control Room operators received an alarm on annunciator 111C, "Steam Generator 'D' Flow Mismatch." The 'D' Steam Generator Main Feedwater Regulating Valve was closed and level in the Steam Generator 'D' was decreasing. Per the Alarm Response the Control Room operators took manual control of Steam Generator 'D' Main Feedwater Regulating valve and attempted to open the valve.

The Main Feedwater Regulating Valve for Steam Generator 'D' failed closed and steam generator level decreased below the reactor trip setpoint of 23.5 percent. This condition resulted in an automatic reactor trip. The automatic actuation of the reactor trip occurred as designed. All control rods fully Inserted, and all safety equipment performed as designed. The Reactor Protection System (RPS) and the Engineered Safety Features (ESF) performed as required. The unit received a feedwater isolation and auxiliary feedwater actuation (both motor and turbine driven) because of the low-low steam generator levels.

One cooldown steam dump valve failed to fully close, and it was isolated to allow automatic control of reactor coolant system (RCS) temperature using the remaining cooldown valves. There was not an excessive cooldown and RCS temperature decreased to 553 degrees F. The primary safety relief valves did not lift. Secondary (atmospheric) relief valves lifted and reseated.

There has been no history of steam generator tube leakage. There were no radiological releases. A post trip review was performed and the plant was restarted.

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Root Cause:

The cause of the Main Feedwater Regulating Valve closure was the failure of a Westinghouse 7300 Process Control NCB Group 1 controller card [IMOD] that provides control for the Main Feedwater Regulating Valve for Steam Generator 'D'. Preliminary investigation identified a blown fuse on the controller card. After removal of the faulty controller card, Wolf Creek personnel replaced the fuse and placed the controller card in a bench test environment that simulates plant conditions. Evaluation and testing of the controller card is ongoing.

Corrective Action Taken:

A post trip review was performed and it was concluded that the Westinghouse 7300 Process Control NCB Group 1 controller card failure initiated this event. Additional information from the evaluation and testing of the controller card will be provided if it has significant industry impact. The Westinghouse 300 Process Control NCB Group 1 controller card was replaced.

Safety Significance:

The safety significance of this event has been evaluated and determined to be low, although any challenge causing a plant trip is not desirable. This

event is bounded by the current licensing basis analysis as reported in USAR Section 15.2.7. All safety equipment performed as designed and there were no adverse effects on the health and safety of the public.

The event reduced normal feedwater flow to "D" steam generator, resulting in the reduction of inventory level in the secondary side of the steam generator. The reduction in level provided the input to trip the reactor, isolate all normal feedwater and start the motor and turbine driven auxiliary feedwater pumps. There were no adverse effects on the reactor core, the reactor coolant system, or the main steam system, due to the auxiliary feedwater system's capacity to supply the necessary heat sink.

Other Previous Occurrences:

WCGS Licensee Event reports were reviewed from January 1, 1994, to present.

Six ESF actuations were reported since January 1, 1994. No ESF actuations were identified that are related to a controller card failure. However, LER 96-006-00 identified a failure of the Main Feedwater Regulating Valve for Steam Generator 'C' because of the failure of a roll pin. However, the cause of the event reported in LER 96-006-00 is not related to the event discussed in this LER.

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Attachment I to WO 99-0074

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LIST OF COMMITMENTS

The following table identifies those actions committed to by Wolf Creek

Nuclear Operating Corporation (WCNOC) in this document. Any other statements in this submittal are provided for information purposes and are not considered to be commitments. Please direct questions regarding these commitments to Mr. Michael J. Angus, Manager Licensing and Corrective Action at Wolf Creek Generating Station, (316) 364-4077.

COMMITMENT Due Date/Event

Additional information from the evaluation and testing N/A of the controller card will be provided if it has significant industry impact.

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